

wherein the preparing comprises preparing the wet raw material pellets having a size between 7 mm to 20 mm.

28. (New) A method for reducing the wet raw material pellets according to claim 23, wherein the charging comprises forming one of a single layer of the wet raw material pellets and a double layer of the wet raw material pellets.

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REMARKS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 9-13 and 23-28 are presently pending in this application, Claims 11-13 having been withdrawn from further consideration by the Examiner, Claim 9 having been amended, and Claims 23-28 having been newly added by the present amendment.

In the outstanding Office Action, Claims 9 and 10 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite; and Claims 9 and 10 were rejected under 35 U.S.C. §102(b) as being anticipated by Kotraba et al. (U.S. Patent 5,186,741).

With regard to the rejection under 35 U.S.C. §112, second paragraph, Claims 9 and 10 have been amended to clarify the subject matter recited therein. Thus, Claims 9 and 10 are believed to be in compliance with the requirements of the statute. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Also, Claim 9 has been amended and Claims 23-28 have been newly added herein. These amendment and additions in the claims find clear support in the specification, claims and drawings as originally filed. For example, the amendment to Claim 9 is supported by

page 25, lines 2-7, of the specification, Claims 23 and 24 are supported similar to Claims 9 and 10, respectively, and Claims 25-28 are supported by page 27, lines 15-23, of the specification. Hence, no new matter is believed to be added thereby.

Briefly recapitulating, Claim 9 of the present invention is directed to a method of reducing wet raw material pellets including charging the wet raw material pellets comprising a wet mixture of iron oxide powder and reducing material powder on the rotary bed of the rotary bed reducing furnace and reducing said wet raw material pellets by heating thereof in the reducing furnace, the method further including forming a bed covering layer by covering the rotary bed of the rotary bed direct reducing furnace immediately before charging the wet raw material pellets by insulating material particles having a higher melting point than the heating temperature in the reducing furnace for reducing the wet raw material pellets, and charging the wet raw material pellets on the bed covering layer. By forming a bed covering layer in the reducing furnace for reducing the raw material pellets as such, the wet material pellets made of a wet mixture of iron oxide powder and a reducing material powder, which are weaker than dry pellets in their mechanical strength, are charged into and reduced in a direct reducing rotary bed furnace, and reduced iron is produced from the wet material pellets formed of the iron oxide powder without a separate dry process, thereby significantly saving time and energy.

The outstanding Office Action asserts that Kotraba et al. disclose a method as recited in Claim 9. Nevertheless, Kotraba et al. are not believed to teach “forming a bed covering layer by covering the rotary bed of the rotary bed direct reducing furnace immediately before charging the wet raw material pellets by insulating material particles having a higher melting point than the heating temperature *in said reducing furnace for reducing the wet raw material pellets*” as recited in Claim 9 (emphasis added in *Italic*). On the other hand, Kotraba

et al. disclose a direct reduction process in which green pellets of a mixture of steel furnace dust, a carbonaceous material and a binder are fed over a layer of burnt pellets on a rotary hearth furnace which *successively conveys the pellets first through the drying and coking zone 36 in which the pellets are dried, and then traveled through the reduction zone 38.* Furthermore, according to Kotraba et al., “[e]ach zone is separated from an adjacent zone by a barrier curtain 40 which is constructed of an alloy suitable to withstand high temperatures and corrosive atmospheres within the zones” (emphasis added in Italic).¹ As such, the Kotraba et al. method is believed to be still relying on a separate dry process. Therefore, the subject matter recited in Claim 9 is believed to be distinguishable from Kotraba et al. and thus is not believed to be anticipated thereby.

Likewise, independent Claim 23 is believed to include subject matter substantially similar to what is recited in Claim 1 to the extent discussed above. Thus, Claim 23 is also distinguishable from Kotraba et al.

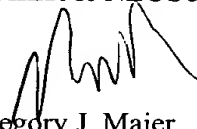
For the foregoing reasons, Claims 9 and 23 are believed to be allowable. Furthermore, since Claims 10 and 24-28 directly depend from either Claim 9 or 23, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 10 and 24-28 are believed to be allowable as well.

¹ Kotraba et al., column 3, lines 35-38.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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IN THE CLAIMS

Please amend Claim 9 and add new Claims 23-28 as follows:

--9. (Amended) A method of reducing wet raw material pellets comprising the steps of charging the wet raw material pellets comprising a wet mixture of iron oxide powder and reducing material powder on the rotary bed of the rotary bed[-type] reducing furnace and reducing said wet raw material pellets by heating thereof in said reducing furnace, the method further comprising the steps of:

forming a bed covering layer by covering the rotary bed of the rotary bed[-type] direct reducing furnace immediately before charging the wet raw material pellets by insulating material particles having a higher melting point than the heating temperature in said reducing furnace for reducing the wet raw material pellets; and

charging the wet raw material pellets on said bed covering layer.

23.-28. (New)--